

LEAD PAPER

TECHNICAL TEACHER EDUCATION:

SOME CONSIDERATIONS FOR THE FUTURE

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"Continuing education should be an integral part of the teacher education process and should therefore be arranged on a regular basis for all categories of educational personnel."

Recommendations of UNESCO Conference on the Teacher's Role and Training -
Geneva 1975.

Introduction

In seeking to explain the circumstances which promote the disparity between the needs of society and the aims and outcomes of education, Coombs (1) identifies (a) the "intrinsic inertia" of education systems and (b) the short fall of essential resources for education as two of the principal causes. That the two are linked is self-evident, particularly if the notion of the teacher as an education 'resource' is sustained. The behaviour of teachers and educational organisations will do little to alleviate "inertia" unless change, strategies for change and the management of change are seen within new and evolving perspectives.

This paper aims to promote a framework within which "change", as applied to the context of technical teacher education, may be analysed. Necessarily, reference is made to established practice in the sense of policies, control systems, training priorities and training schemes.

Whilst 'stock-taking' is regarded as an essential pre-requisite in the sense of delineating the status quo, descriptions should extend beyond the limits imposed by legislative, administrative and course-content considerations. Involvement in the promotion, management and evaluation of change demands more than a mere curiosity regarding attitudes, morale, expectations and professionalism.

The catalytic role of the views expressed in this paper is both diverse and complex. Wisdom dictates, therefore, that the writing be directed to the promotion of innovatory ideas and rational plans for change, suitably couched in terms of reality and practicality. Prescriptions are, therefore, avoided'.

TECHNICAL TEACHER EDUCATION IN DEVELOPING COUNTRIES:
AN OVERVIEW OF THE PRESENT POSITION

Present day provision is, for the purpose of this paper, significant for qualities and characteristics not normally revealed by straightforward description. Cross-cultural stock-taking demands that due attention be paid to the evolutionary sequence applicable to the system of technical teacher training in each of the selected countries. The model based on developments in England and represented in Appendix A, is compiled by way of illustrating priority shifts which occur during the sequential development. The views of Beeby (2) on the status of teacher education in the development of an educational system and with particular relevance to the quantity/quality dilemma are useful in this context.

Given the diversity of problems and opportunities in third-world nations it is questionable if much of substance can be gained from the formulation of generalisations. However, patterns of provision for the training of technical teachers display the respective influences of colonialism, size, economic structure and the sources of bi-lateral or multi-lateral aid programmes.

Early forms of provision in many ex-British colonies or protectorates were, for a number of obvious reasons, based upon the experiences and traditions of the four specialist institutions established in England for the training of technical teachers and based on Bolton, Huddersfield, London and Wolverhampton. Various reports compiled by Gailer, (3) Watts and Sparrow, (4) and others during the 1960s ensured that "cultural borrowing" had a direct or indirect influence on the genesis of aims and forms of provision in Kenya, Nigeria and Ghana.

Primarily the provision which was conceived out of consideration for the staffing of secondary technical schools recognised that training should aim to:

- (a) Develop the general and specialist education of the prospective teacher such that he would (i) have an adequate grasp of the subject he professes, (ii) have a good command of written and spoken language, (iii) have the ability to develop his knowledge and skills.
- (b) Ensure that the teacher has, on the basis of first-hand experience, a knowledge of work practice and an appreciation of the operation of work organisations.
- (c) Develop an appreciation of teaching techniques and the theoretical foundations to which they relate.

The passage of time has witnessed the elaboration of training needs in keeping with improvements in the standard of general education, the diversification of technical/commercial courses and a recognition that the higher levels of study impose comprehensively different knowledge, experiential and skill demands upon teaching resources.

From humble beginnings has developed such present day provision as that represented in Kenya by the work of KTTC and the Kenya Polytechnic; in Nigeria by the Yaba Technical Teachers' College, the Kaduna Polytechnic and the Nsukka degree programme; in Ghana by the courses offered through the Advanced Technical Teachers' College of the University of Cape Coast.

It would be an injustice to gloss-over developments in such vague terms. An analysis of provision in the countries and institutions mentioned and further afield will reveal that maturation and innovation are being promoted by indigenous organisations on a unilateral basis or in collaboration with international funding agencies.

By contrast other and smaller third-world nations are still in the throes of establishing provision on the basis of a conservative approach to the definition of training needs as they arise in the work of relatively small groups of technical teachers. Appendix B outlines such a provision.

In recent times technical teacher training institutions have, by their actions, confirmed what amounts to a consensus view on changing and developing training needs. Quite clearly, changes arise in the light of revised organisational policies and in particular where such revision represents the search for enhanced status. Attendant needs emerge as new views develop on the role of the teacher and on the relationship between the teacher and the organisation.

Whilst accepting that the nature and level of awareness of emerging needs will vary region by region and nation by nation it would appear reasonable to represent common and recently up-dated needs in the following terms:

- (a) Courses of initial professional training should reflect the diversification of technical courses as they are matched to the demands of the labour market; this calls for a more highly critical treatment of specialist subject matter and teaching methods as they apply to particular forms of knowledge and skills.
- (b) Up-dating courses are necessary if teachers are to maintain or enhance their individual levels of efficiency and if the content and attitudes of education are to continue to relate, in realistic terms, to the vocational context.
- (c) If teachers are to assume responsibility for a wide range of on-going decisions and, further, in organisational terms they are to behave in a more flexible manner, then a more liberal definition should be exercised in respect of the foundation disciplines of education; this by way of reference to the need for a more sophisticated appreciation of the relationships which may be conceived as between relevant 'theory' and desired 'practice'.
- (d) In-service, modular-based in-depth courses respecting such topics as curriculum development, evaluation, the management of institutions, the management of change, the development and deployment of learning resource units are necessary in order that those who are destined to assume responsibility at the first level in line management (and above) are equipped to exercise the requisite leadership.
- (e) Programmes of secondment aimed at developing a cadre of leaders and involving higher level studies (e.g. Master's degree level) in either a specialist discipline or Education.

The above list is not intended to represent any particular order of priority, for considerations of that kind are truly particular to the circumstances prevailing within a system at a given time. However, it may be that the perpetual search for relevance directs that (a) is a high-ranking priority. In the event, the situation is characterised by the need for precise information which, when collated, will illuminate the relationship between:

Occupational specification; knowledge and skill requirements

Specialist technical curriculum

Training of specialist technical teacher

Such a task may be confused by the operation of standard designations which, when extrapolated from their authentic cultural contexts, add to the irrationality of much of educational planning. A training survey of the kind conducted by Dr L S Chandrakant (5), Director of the Colombo Plan Staff College is helpful in this type of situation. Chandrakant adopts a comparative approach as a means of illustrating a variety of ways in which the term 'technician' is consistent with particular cultural contexts as represented by curriculum and institutional dimensions. He then proceeds to answer the question: "What guiding principles will help the countries in designing appropriate technician teacher courses?" by summarising the main factors to be respected when planning such courses.

TECHNICAL TEACHER EDUCATION IN DEVELOPING COUNTRIES:

A RATIONALE FOR DEVELOPMENT

The rationale of a national training system is, of necessity, couched in terms of principles and global considerations. For those who translate the rationale into objectives and action there exist considerations and implications which are peculiar to sub-systems, to an institution of technical education and to particular groups of teaching personnel. This is a crucial point of articulation. The manner in which contingencies are accommodated will clearly delineate the training role envisaged for the technical school or polytechnic within the overall training scheme.

It is, perhaps, wise to emphasise that "training" is not used in the narrow sense of perpetuating existing practice, standards or attitudes. On the contrary, "training" is applied in this context to refer to the education and development of the technical teacher in the most comprehensive sense and is certainly inclusive of teacher self-help initiatives, experiential learning and distance learning.

At the national level decisions are necessary on the basis of distinctions which may be drawn between the various levels of technical and vocational education. Distinctions may serve the purpose of highlighting the skill or, alternatively, the academic bias of courses, in a manner which permits conclusions to be drawn vis-a-vis the training needs of teachers and instructors. Such a statement may be seen in terms of 'splitting hairs', but to counter such a claim this paper would see a clear definition of teacher function to be a pre-requisite of training specifications.

Validation of courses with all the ramifications of status, currency and system morale, should be seen in the related contexts of administrative expertise, academic standing, independence and political power. Clearly the advantages which are to be gained through affiliation with a University have been demonstrated by developments in Fiji (in collaboration with the University of the South Pacific) in Ghana (in collaboration with the University of Cape Coast) and in Nsukka, Nigeria (in collaboration with the University of Nigeria). Decisions on affiliations of this kind appear to presume advantages similar to those enjoyed by the Colleges of Education (Technical), England, through their links with the Universities of Manchester (Bolton), Leeds (Huddersfield College and London (Garnett College).

Issues of validation, by their very nature, relate to the extent and nature of central control exercised by government in respect of institutions of technical education and technical teacher training. Where a decentralised or federal system is in operation the credence and stability of a University may do much to enhance the standards and status of the provision. Affiliation of this kind may lead to the desired flexibility being an inherent feature of technical teacher training.

Programmes for educating technical teachers in developing countries should differ among themselves and, as a group, they should depart in significant ways from programmes in countries with more diverse systems of social institutions and with more sophisticated technologies. Technical education everywhere is trying to adapt more effectively to changing economic and social needs. If education is to respond realistically to present and future demands the whole philosophy, organisation, content and method of technical teacher education should be re-examined.

Examination of the view expressed by Peshkin (6) that: "... rote learning appears to be the major student reaction to the demands of education - a behaviour which is clearly reinforced by the dominance of certain forms of examination," leads one to dwell further on the matter of course validation.

The rationale for training, whether viewed at national or institutional level, is therefore conceived as an instrument of change. It clearly directs attention to the policy decision that action is necessary in order to:

- (a) Improve the effectiveness and efficiency of institutions providing technical education.
- (b) Ensure that the individual teacher is adequately qualified and competent to satisfactorily undertake his current responsibilities.
- (c) Assist the teacher in preparing to undertake new tasks.
- (d) Prepare the teacher for career advancement.
- (e) Ensure that personnel gain high level job satisfaction.
- (f) Prepare both the organisation and the individual such that adaptation to the changing environment takes place on a rational basis.

Pursuit of such a rationale will, no doubt, result in the emergence of conflicts. But the energy of conflict can be harnessed and utilised for the well-being of all interests if due attention is paid to the institutionalisation of ideas and policies. To make the point. Many well-meaning training plans fail to take realistic account of the effect of training upon:

- (a) The relationship between the organisation and its environment.
- (b) The relationship between groups in the organisations.
- (c) The relationships involving the individual and his work reference group and the individual and the total organisation.

Thoughts on a reform of training, therefore, demand complementary thoughts on the implications for organisational behaviour and subsequent decisions on the strategy for the management of change. In this manner planning considerations expose areas of training need which are identified with those

in the management hierarchy. More on this matter later.

In most third-world countries technical education has been entrusted with the related responsibilities of transmitting certain essential forms of knowledge and providing adequately trained manpower for the economy. The existing or envisaged relationship between technical education and the labour market will be subject to change. Notions of 'relevant' knowledge will change. The rate at which acquired knowledge may become obsolete requires that the teacher redefines his role in the direction of assisting learners learn how to learn!

Here are two factors which bring pressure to bear on existing institutional policy. How an organisation responds to such pressures is regulated by extrinsic and intrinsic controls. The former comprises socio-political and economic determinants. The latter are represented by the existing organisational structure and the manner in which the organisation quantifies, categorises and articulates its resources.

The definition of training (or development) needs and the ordering of priorities will arise from training surveys and the collation of the resulting data which in particular relates to:

- (a) The immediate and longer term development policy of the organisation with detailed reference to the magnitude and orientation of changing functions.
- (b) An inventory of existing resources and expertise.
- (c) An objective estimate of new resource needs with particular reference to teaching expertise and necessary back-up services.
- (d) The concerns, attitudes and aspirations of existing personnel.
- (e) The existing management/decision-making structure as it relates to the allocation of authority and the discharge of responsibility.
- (f) The transitional time-scale, the number of teaching hours which can be committed for training or re-training and the availability of in-house or external training services.

In this way, training targets have relevance and authenticity in terms of the developmental goals of the organisation. That the training targets relate to considerations beyond those of curriculum and teaching methods can be deduced from the data inputs (a) to (f) above and the need areas represented in Appendix C.

Training need surveys are the means whereby an organisation may identify the nature, scale and status of necessary training inputs. As stated earlier, such defined inputs may reflect the unsatisfactory manner in which the organisation is currently fulfilling its prescribed role or alternatively (and far more healthily) the realism and objectivity being directed to the business of preparing for a new and future role.

On the basis of recent third-world training need surveys carried out by the Overseas Unit of Bolton College of Education (Technical) it would seem that priorities can be represented, without reference to particular national hierarchies, in the following terms:

- (a) Need for further development in terms of subject-matter knowledge.
- (b) Need to educate serving or aspiring teachers in terms of the diversifying educational and social roles of the teacher with particular reference to the inter-related activities of teaching and learning; training should aim to dispel the notion of the teacher as a mere source of information and instead, seek to confirm the various facets of his role as a promoter of experiential learning; changes in teacher behaviour should lead to the rejection of rote learning as the major reaction to the demands of education.
- (c) Need to recognise the comprehensive parameters delineated by the curriculum as a means of moving away from the more ritualised and prescriptive guidelines traditionally provided by syllabuses and examination papers.
- (d) Needs as they apply to effective communication as the basis for human learning; training as a means of ensuring the more effective utilisation of instructional aids.
- (e) Needs in terms of the theoretical and skill aspects of evaluation, particularly in as much as that process applies to the curriculum and to learner achievement respectively.
- (f) The need to identify and provide training in respect of the management function of the teacher; particular attention to be directed to the management of learning activities, resources, curriculum change and team-teaching.
- (g) The need for a more sophisticated and adaptable approach to the preparation of lesson plans, teaching strategies and the design of learner tasks.
- (h) The need to respect new priorities in terms of the in-service development of teachers as a means of maximising resources represented by existing personnel and, further, in the interests of enhanced job satisfaction.

Policy decisions as they affect the balance between pre-service and in-service training in African countries are complicated by the shortage of qualified personnel in industry and commerce and the resulting persistent movement of trained personnel from the education service into other sectors of the economy where considerably higher rates of remuneration apply. The amelioration of this fundamental problem cannot be brought about by the apparently simple remedy of paying higher salaries but a more highly personalised approach to the professional development of technical teachers, mounted on a continuing basis, could do much to counter the effects of the unsatisfactory or frustrating elements in the work environment.

In formalising the rationale a clear commitment to the ideal of an integrated training system should be demonstrated. Existing and somewhat arbitrary distinctions between pre-service education, pre-service training and in-service training should be reviewed with a view to achieving higher and more beneficial levels of integration. Aims and tasks associated with the various 'elements' of the system should collectively demonstrate coherence.

Summarising, therefore, the rationale should clearly identify the constituents of the system in such a manner as to propose a continuum of training which, beyond articulating a variety of responses to the training needs identified by 'market research', represents a compendium of training frameworks which are supportive of long-term career projections.

The principal constituents or training inputs of any system may be categorised as follows:

<u>Constituent</u>	<u>Location in scheme</u>
(i) Technical education aimed at achieving the necessary levels of specialist competency.	(a) Pre-initial teacher-training - to provide career entry status. (b) In parallel with teaching duties either through part-time course attendance, correspondence courses, distance/informal learning. (c) Secondment through sponsorship to read for higher qualifications and undertake research. (d) Short/intensive highly specialised study and skill acquisition in collaboration with manufacturers or international training agencies
(ii) Teacher education of a general nature.	(a) Initial, highly skill-centered programme of professional training for teaching. (b) In-service courses of higher level study in pedagogies - to include in-depth specialist curriculum studies, an introduction to investigatory methods in education, evaluation processes and communication - probably leading to the award of Bachelor degree. (c) Intensive/modular-based courses designed to serve a remedial function in respect of particular skill needs, e.g. interpersonal skills, counselling, communication, lesson planning and the evaluation of teaching strategies.
(iii) Modular teacher education courses relating to emerging areas of national need.	In-service courses designed to react to demands imposed by curriculum reform, new examination schemes, the promotion of new courses, etc.

<u>Constituent</u>	<u>Location in Scheme</u>
(iv) Short course provision.	Essentially concerned with the dissemination of information on new developments, research outcomes, experimental schemes and projects.
(v) Linear and modular-based courses leading to further qualifications and the acquisition of leadership skills.	In-service provision related to: (a) Management in education. (b) Curriculum development and evaluation. (c) Research design and application. (d) The role of teacher mentor or professional tutor. (e) A systems approach to course planning and control etc.
(vi) In-house development schemes.	Aimed at utilising the collective expertise of the employing institution, e.g. (a) Task group activity related to the production of learning packages. (b) Group projects concerned with the evaluation of the utilisation of available educational technology. (c) Staff seminars.
(vii) Industrial/commercial experience - up-dating programmes.	(a) Periods of industrial attachment prior to commencement of full-time teaching. (b) Assumption of in-service role of liaison officer operating between specialist department and appropriate sector of local economy. (c) Secondment for experience of advanced technology in developed country. (d) In-service attachments to manufacturers through opportunities afforded by trade agreements.

<u>Constituent</u>	<u>Location in Scheme</u>
(viii) Co-ordinating activity exercised by employing institution in collaboration with appropriate Ministry department.	Employing college - as represented by the development function of the teaching organisation. (see subsequent section of paper)

THE ROLE OF THE EMPLOYING INSTITUTION
WITHIN THE TRAINING SYSTEM

The recent Report of the Haycocks Committee (7) on the training of full-time teachers in establishments of further education in England and Wales contains recommendations which have far reaching implications for employing institutions and the role they will assume in the total and continuing teacher development process.

In recognition of the back-log of untrained personnel and out of a desire to improve the quality of in-service technical teacher education, the Committee prepared recommendations based upon the assumption that advantages were to be gained by (a) more directly relating courses of professional development to the place of work, and (b) expanding the resources available for in-service teacher education by involving suitably experienced and qualified technical college staff in a joint training venture alongside colleagues in colleges of education (technical) or equivalent regional centres. The recommendations, which have received wide acclaim, have been, or are being, converted to action through schemes promoted by regional organisations established for the purpose.

The schemes will develop the capacity of in-service training alongside the traditional pre-service schemes though it is assumed that the latter will undergo substantial contraction.

Provision developed by the North West Region and based on the Bolton College of Education (Technical) as the designated Regional Centre will comprise a three-phase course for newly appointed and untrained full-time teachers and take the form set out in Appendix F. Phase I (thirty hours) will be undertaken in the employing institution; Phase II (270 hours) will be provided through one of a number of designated area centres; Phase III (300 hours) will be based on the Regional Centre. Executive action rests with the Bolton College through its relationship with the University of Manchester (the validating body) and the Regional Board for the scheme (responsible for policy, planning and overall control).

Should the reality of the scheme keep faith with the spirit of its rationale then there would appear to be little doubt regarding the future cohesion of traditionally diverse training activities. Clearly a participative scheme of this kind should provide sensitivity of the kind necessary to accurately and promptly relate training activity to prevailing needs.

The Report further recommends that professional tutors should be appointed to serve in technical colleges to form a key element in the arrangements proposed. The professional tutor is seen as a counsellor of teachers with a responsibility for maintaining liaison with training centres and others involved in the training process. He will also co-ordinate and oversee the induction of new members of staff.

It is intended that the regional schemes be developed to provide comprehensively for the post-initial training of teachers through the provision of long-term award bearing courses, modular-based programmes catering for specialist needs and short-courses intended to provide information and skill inputs in response to limited but important shifts of policy.

The principal attractions of the new schemes lie in the emerging regional frameworks, which formally bring together 'providers' and 'consumers'. It is conceivable that the new frameworks will render dissemination

of ideas and information on training opportunities and resources more effective.

Direct involvement in such a regional scheme is but one facet of the training function of the technical college. In common with technical schools and polytechnics in developing countries, the English technical college has, in varying degrees, developed in-house training and development services as part of its total educational remit.

The staff-development strategy of an organisation aims to identify and co-ordinate the needs and goals of that organisation with those of individual personnel who serve within it. Staff development processes may be seen as both diagnostic and remedial. The basic strategy may take the form represented diagrammatically in Appendix E and subsequently define the sort of goals represented in Appendix D.

The scope and intensity of a development strategy will be influenced by such factors as organisational scale, the 'spread' of courses offered in terms of level and nature, the relative geographical isolation of the institution and the level of managerial competence. Useful examples of case studies in staff development in African institutions of higher technical education are those provided by Githinji (9) and Fishwick (9).

Irrespective of the size and complexity of the organisation, formal procedures of the kind being recommended have potentially a number of advantages:

- (a) Newly appointed staff (academic and ancillary) join an institution which is known to value staff development, which makes in-service provision for such development and which expects participation.
- (b) Established staff know that their job satisfaction, both current and future, is recognised to be of major importance, and that they have ample opportunity to discuss the prospects and develop themselves accordingly.
- (c) Development needs are identified across the institution so allowing the allocation of priorities and the organisation of self-help through in-house courses, the rotation of responsibilities and the promotion of task group initiatives, etc.
- (d) Problems which arise from the divergence between the ambitions of staff and the development plans of the institution can be identified and dealt with.

Securing advantages (c) and (d) will depend upon majority participation which in turn will hinge on whether what is implied by a staff development programme can generate satisfactions which compensate for a presumed loss of autonomy. This raises the whole question of incentives and rewards and the extent to which teachers can change the basis of their professionalism to an extended form.

A comprehensive intrinsic staff development provision will embrace activities of the kind listed below:

Organisational

- Induction provisions for newly appointed personnel.

Teaching

- Support services for staff undertaking external/internal in-service courses of professional training for teaching.
- Support in respect of the up-dating of specialist knowledge including staff sponsorship for specialist subject courses on a planned basis.
- Support for an extension of specialisation into other subject areas promoted on the basis of inter-faculty links.
- Support in experimentation with new teaching methods.

Administrative

- Essentially related to administrative processes as they involve members of academic staff; namely:
 - (a) Organisational (timetables, examination arrangements, selection procedures, etc).
 - (b) Financial (production of sub-estimates, purchasing procedures, keeping of stock records etc).
 - (c) Communication and office procedure (drafting of internal memoranda and instructions, dealing with external correspondence, preparation of reports and minutes, establishing an efficient storage/retrieval system).

Personal Development

- Activity principally concerned with the development of personal qualities such as confidence, leadership, initiative etc., experience of this kind to be gained from:
 - (a) Service on college or other committees.
 - (b) Experience as an officer of such committees.
 - (c) Discussion group leadership.
 - (d) Small scale research into educational problems, e.g. student problems.

In the interest of good staff relations it is important that the aims, nature and method of implementation of a staff development policy should be clearly understood by all those for whom it is intended. Details of the scheme should, therefore, be circulated in advance and time allowed for comment and structured discussion prior to implementation.

It can be seen, therefore, that a staff development scheme of the kind described has, by virtue of how it relates to all aspects of organisational

life rather than its 'volume', the potential to generate the difference between mediocrity and excellence. An activity of such scope and importance cannot successfully accomplish the pre-determined goals if controlled out of partisan interests.

In a larger organisation it is conceivable that the scheme will be co-ordinated by a staff development officer who is directly responsible to the director of the institution. It may be that on account of size and diversity of function collaborative roles are defined for the staff development officer (logistics) and the professional tutor (pastoral) respectively. In a smaller organisation the responsibilities can be merged in one appointment or, alternatively, assumed by the vice-principal or deputy director.

CONCLUSIONS AND RECOMMENDATIONS

Article II (Aims and Objects) of the Constitution of the Commonwealth Association of Polytechnics in Africa clearly states the nature of Polytechnic interest in matters pertaining to the training and further development of technical teaching personnel. The conclusions and recommendations which follow are formulated out of respect for Article II and the achievements of African Polytechnics to date.

1. Notwithstanding the decision of the United Nations Economic Commission for Africa to establish an African Institute for Higher Technical Training and Research (location to be decided, July 1980) it would appear timely to consider the case which can be made for an African Technical Education Staff Development 'focus' of the kind currently provided in South-East Asia (Singapore) by the Colombo Plan Staff College or in England by the Further Education Staff College at Coombe Lodge.

Such a centre would be resourced in a manner which would render it capable of:

- (a) Processing and disseminating information through the media of news-sheets, research abstracts, and discussion papers/articles submitted by teachers and administrators.
- (b) Promoting, co-ordinating and reporting on, training surveys, educational investigations and research.
- (c) Providing intensive short courses, conferences and workshops as responses to the in-post needs of senior personnel.

Such a 'focus', being principally resourced by personnel seconded from participating African Polytechnics, could be expected to develop the necessary empathy for the developmental circumstances, problems and training needs of the diverse range of institutions enjoying membership of CAPA.

2. Short-term and longer-term considerations related to the present developmental status of many Polytechnics would recommend that the procedures utilised for the development of leadership be reviewed. This is not to indict the present leadership but rather to recommend that measures aimed at preserving high standards in the future be secured.

Particular attention could, with advantage, be directed to the further development of established and aspiring senior personnel through the provision of long and short base study programmes in:

- (a) The management of education, including the management of change, of resources and of curriculum reform.
- (b) Personnel management, including a study of staff appraisal systems and techniques.

(c) Curriculum development and evaluation.

(d) The planning of resources for education including work on the design of learning resource centres, laboratories and workshops.

(e) Methods of educational enquiry, with particular reference to training need surveys, 'market' research, the evaluation of education systems (comparative) and so on.

Such provisions could be secured through individual in-house schemes (Larger Polytechnics), the facilities afforded by the proposed 'Staff College' or bi-lateral arrangements.

3. Further to (2), consideration should be directed to the advantages accruing from the development of Master's degree study programmes for suitably qualified polytechnic personnel and based upon courses of study/research having particular relevance to the sphere of polytechnic involvement. The courses could be seen as the technological sector equivalents of courses currently offered for teachers in primary and general secondary education. The courses should be based within the geographical sphere of CAPA influence and could, in the first instance, seek to take advantage of collaboration with experienced personnel currently tutoring such courses in the United Kingdom and even contemplate the advantages of early validation through an English University. (The University of Cardiff has, for some time now, been involved in the validation of home-based courses for teachers serving in Nigerian schools).

4. Individual polytechnics can, irrespective of size and resource limitations, do much to improve organisational 'health' through the development of new, or the improvement of existing, staff development schemes. Such schemes do, however, have complex implications for existing organisational arrangements, attitudes and the autonomy of the teacher.

Clearly, contextual considerations should be exercised in advance. Organisational structure and management style must provide a climate favourable to the introduction of such a scheme.

Given that the scheme operates in an effective manner, it is reasonable to expect that the nature of interpersonal competition and individual career aspirations will be modified. Such outcomes are not necessarily dysfunctional when considered in connection with scheme 'inputs' aimed at developing organisational cohesion and a more effective corporate identity. Sufficient to suggest that a recognition of the full range of possible outcomes should directly influence the manner in which the scheme is planned and implemented.

THE PHASES OF DEVELOPMENT IN
TECHNICAL TEACHER EDUCATION IN ENGLAND

PHASE 1

Emergency Response

Characterised by:

- (a) Generally invalid assumptions regarding familiarity with specialist subject matter; technical qualifications possessed taken as an indication of level of knowledge and understanding acquired.
- (b) Emphasis upon pre-service training.
- (c) Within pre-service training schemes, emphasis placed upon the traditional theoretical foundations (philosophy, psychology and sociology), teaching methods, lesson planning, evaluation of student work/progress, the organisation of the educational system and supervised teaching practice.
- (d) Prescriptions and stereotyped responses to problem situations.
- (e) A once-and-for-all attitude to teacher training.
- (f) Training organisations being physically detached from the institutions of technical education.

PHASE 2

A Refined Response

Changes in character promoted by the rapid expansion and changing nature of technical and vocational education, the inability of earlier initiatives to comprehensively tackle the back-log of untrained personnel and the more overt attempts through policy to render technical education more responsive to the demands of the economy.

Characteristics of this Phase may be set forth thus:

- (a) Invalid assumptions regarding specialist knowledge still prevalent though attempts at diagnostic and remedial activities are being made.
- (b) Development of in-service training in parallel with established pre-service schemes; in-service provision tending to respect a variety of aims including subject matter and skill up-dating.
- (c) Within courses, developing emphasis upon educational technology, examinations and testing, project work and curriculum development; moves to replace conventional theoretical

'strands' by integrated 'education studies'.

(d) Problems of relating the 'theory' and 'practice' of teaching tend to remain in more or less their original form.

(e) Development of wider range of diploma and degree courses for teachers causing some to change their perceptions of initial teacher training.

(f) Training still the responsibility of specialist establishments.

(g) Establishment of national staff College to act as a focus for the development of senior personnel.

PHASE 3

Involvement and Accountability

Escalating costs, changing patterns of provision, recurring need for re-training, democratisation of educational systems, the changing role of the teacher and the devaluation of qualifications have tended to promote a phase which highlights concern for:

(a) The continuing educational needs of teachers which has resulted in national provision of a more comprehensive form in terms of aims and patterns.

(b) A recognition that training for teaching and teaching are integrated parts of the same continuum.

(c) The development of the training role of employing institutions through their active participation in initial and post-experience courses.

(d) The development of induction and in-house training programmes by employing institutions (which has frequently resulted in the appointment of a training co-ordinator and the emergence of the 'mentor' role).

(e) The development of modular training schemes which respect clearly-defined objectives and may involve distance-learning and learning packages.

(f) New inputs to courses which more accurately reflect the professional needs of technical teachers, e.g. curriculum development and evaluation, study skills, counselling, research methods, education management, communication and interpersonal skills, data processing and self-appraisal.

(g) The role of education theory in teacher development courses.

MODEL OF TECHNICAL TEACHER TRAINING IN EL SALVADOR

PROMOTED BY BOLTON COLLEGE OF EDUCATION (TECHNICAL), UNITED KINGDOM

IN COLLABORATION WITH THE INSTITUTO TECNOLÓGICO CENTRO AMERICANO, EL SALVADOR

This in-service provision was designed with a view to flexibility and adaptability. By virtue of its 'unit' structure it may be viewed as (a) a collection of 'special need' packages, each being negotiated without a necessary reference to the others, or (b) as an integrated 'credit awarding' course which, in its complete form, can be seen as the equivalent of a more conventional and continuous approach to initial training.

The course was to cater for a population of academically well-qualified but professionally untrained teachers of mechanical, electrical and construction engineering.

The orientation of each unit may be judged from an appraisal of the aims proposed by the course planners and described in the following terms:

UNIT 1

First Year (Foundation Studies) 120 Hours

- (a) To assist the participants make full use of their professional education and experience in their role as a teacher.
- (b) To introduce participants to the idea of a systems approach to the design of 'formal' learning situations.
- (c) To demonstrate the application and evaluation of various forms of audio-visual equipment in a variety of typical instructional situations.

UNIT 1

Second Year - Emphasis upon practice of teaching (90 hours)

- (a) To observe the manner in which the participants are preparing, utilising and evaluating schemes of work, lesson plans and audio-visual equipment.
- (b) To ensure that full and effective use is being made of available teaching aids.
- (c) To promote individualised counselling sessions based upon observations of teacher behaviour in classrooms and workshops and aimed at increasing teacher efficiency.

UNIT 2

Second Year (120 hours)

- (a) To develop teacher competence in:
 - (i) Design and application of workshop and laboratory instruction schedules.
 - (ii) A range of less formal methods of teaching.
 - (iii) Team teaching activity.
- (b) To introduce course members to:
 - (i) Relevant theoretical perspectives for educational processes.
 - (ii) The management of learning.
 - (iii) The theory and practice of student counselling.

UNIT 2

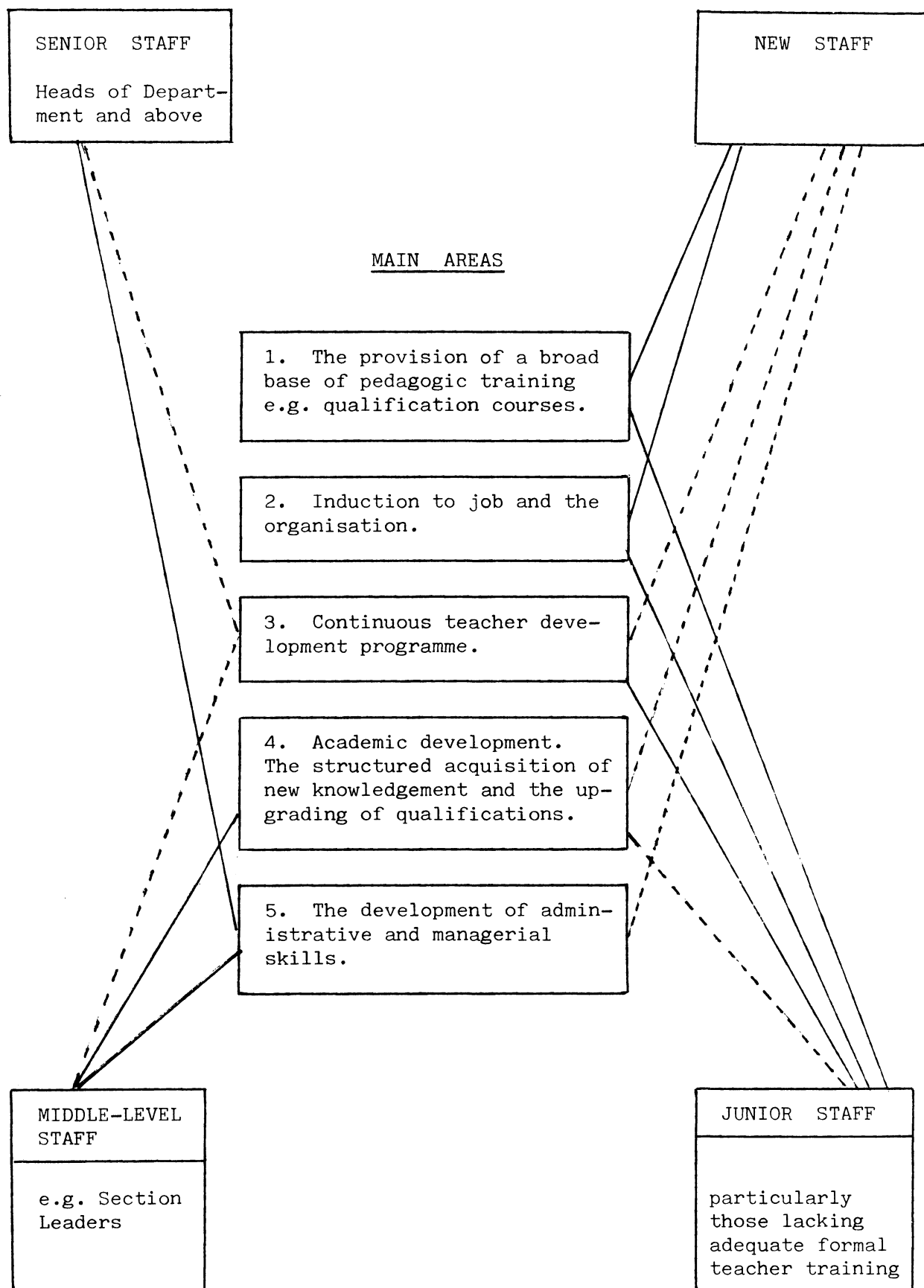
Third Year - Emphasis Upon Practice of Teaching (90 hours)

Aims as for previous practice period.

UNIT 3

Third Year (120 hours)

- (a) To negotiate in-depth studies of the role of media in learning systems.
- (b) To develop familiarisation with the techniques of writing objectives for courses and for specific tasks within courses.
- (c) To analyse the resource needs promoted by individualised learning systems and to consider how such data may be utilised in the design of resource centres.
- (d) To examine the uses and advantages of micro-teaching techniques.



Key: _____ probable main needs
 ----- other possible needs

Staff Development
Policy

INSTITUTIONAL GOALS

To promote corporate identity
To improve organisational efficiency
To secure and exercise an effective communications system
To secure effective line management
To establish job-specification procedures
Ensure adequate resources for courses
Secure plans and processes for on-going curriculum development and evaluation
Secure the effective utilisation of resources

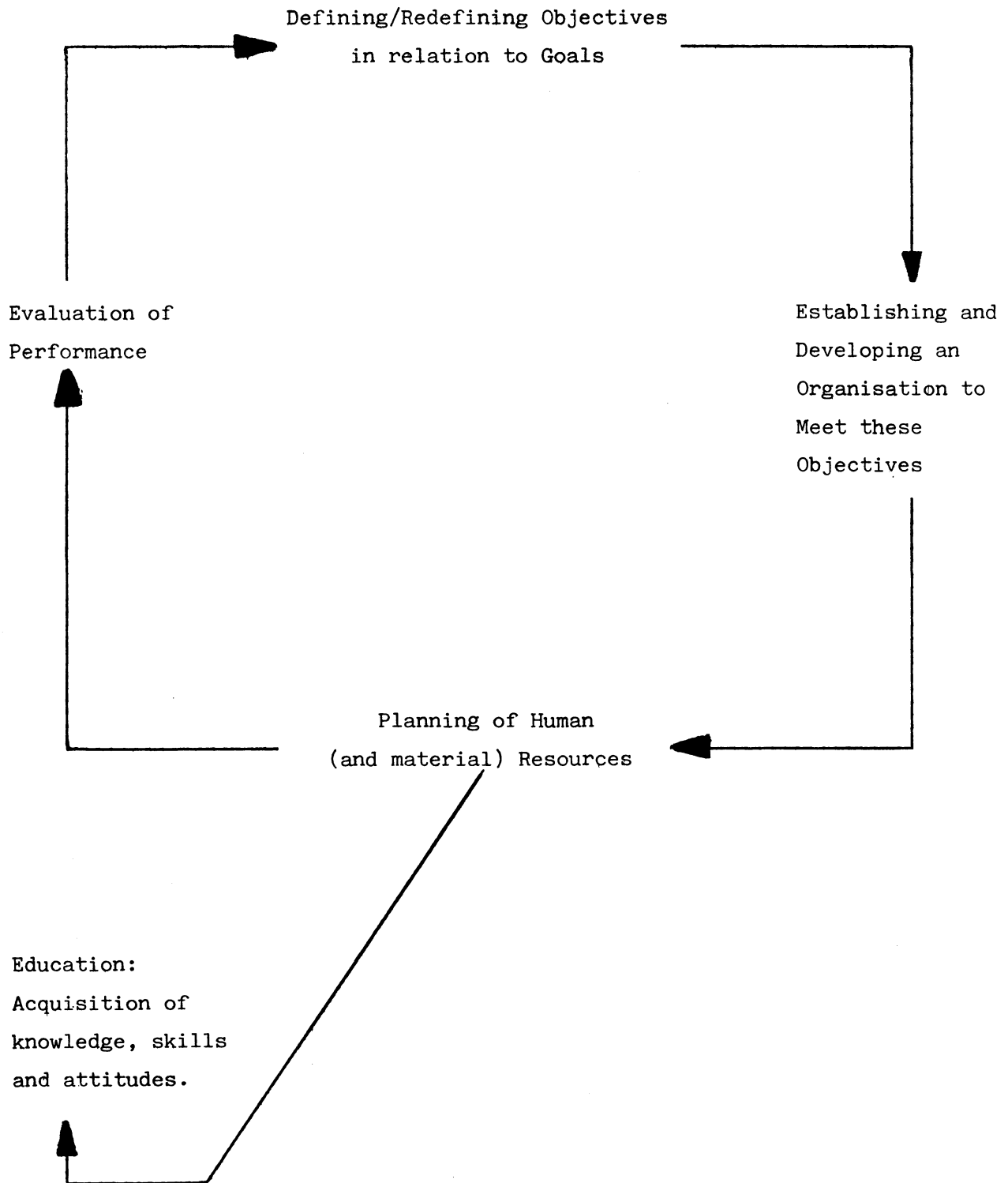
INDIVIDUALISED GOALS

Provision sympathetic to the social and professional aspirations of the staff
Develop opportunities which permit and encourage extensive teacher self-actualisation
Develop administrative procedures such that teachers are in a position to influence a wide range of decisions
Develop acceptable procedures through which to monitor the on-going reactions of staff to their own development and that of the organisation which they serve
Assist teaching personnel in the acquisition and development of objective self-appraisal procedures.

General Comment

Staff Development should be seen as an essential component of a "healthy" social system; an activity which is natural and occurs automatically as part of the management process. Components of organisational health are:
(i) clear goals, (ii) adequate communications, (iii) effective decision-making structures and problem-solving procedures, (iv) resource utilisation, (v) intensiveness, (vi) high morale, and (vii) adaptability.

Ideas on a Basic Strategy for Staff-Development



With acknowledgements to A J Light

"Staff-Developing Education: The Search for a Strategy" (1972)

APPENDIX F

PHASE I (30 hours)	Introduction to teaching (Not less 5 days/30 hours before commencing teaching)
PHASE II (270 hours) <u>Notes</u> 1. Related theory derived from Psychology, Sociology, Philosophy, etc. to be taught concurrently with practical considerations. 2. Assessment tasks are largely parts of teacher's normal work	STAGE 1 (36 hours) Foundation Stage - Identification of learning needs, planning of work (36 hrs) Task: Prepare a Scheme of Work
	STAGE 2 (144 hours) A range of modules, not necessarily sequential, including: 2.1 Resources for learning/teaching (24 hrs) Task: Prepare and evaluate at least two aids. 2.2 Learning through social interaction (42 hrs) Task: Prepare and evaluate at least two group exercises. (24 hrs) 2.3 Assignments and Projects. (24 hrs) Task: Prepare and evaluate <u>either</u> an assignment <u>or</u> a project. 2.4 Learning objectives and assessment of performance. (36 hrs) Task: Prepare and evaluate a test. 2.5 Study Skills (18 hrs) Task: Prepare a report on the study skills appropriate to a particular group of students and the advice to be given to them. <u>Supervised Teaching</u> All the teaching done by a course member, which should not exceed three-quarters normal load, should be regarded as an integral part of his training and planned accordingly. Course members will be visited to assist them integrate theory and practice in relation to the skills and techniques of planning, implementation, evaluation and follow-up. Assessed Teaching: Minimum of three hours observed for purpose of assessment.

	STAGE 3 (90 hours including a BLOCK of at least 10 days)	3.1 Integrating activities (72 hrs)	Task: Prepare evaluation file on all assessment tasks and observed teaching.
		3.2 The organisational and administrative context of F.E. (18 hrs)	

PHASE III (300 hours)	Core Units (140 hours)	A	Curriculum development (50 hrs)
		B	Human learning (50 hrs)
		C	Aims, purposes and structure of F.E. (30 hrs)
		D	Professional development of the teacher (10 hrs)
	Approved Optional Studies		(100 hrs)
	Personal Needs Project - related to Course Member's area of teaching		(60 hrs)
	<u>Supervised Teaching</u> - assessed by a minimum of three hours observed teaching.		
	<u>Assessment</u> - by continuous assessment along with a final paper in Units A, B and C, and an assessment of practical teaching.		

CERTIFICATION will require Course Member to have reached a satisfactory standard in (a) Observed Teaching.

(b) Phase II Tasks and Phase III Core Units.

(c) Optional Studies and Personal Needs Project.

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